I claim:

1) A system for interconnecting telephones and computers, said system including trunk interconnection resources that can be used for either computer data traffic or telephone traffic, said interconnection devices providing a first amount of bandwidth, data traffic generating devices, said data traffic requiring a second amount of bandwidth and having specified classes of service, voice traffic generating devices, said voice traffic requiring a third amount of bandwidth and having specified classes of service, means for dynamically adjusting the bandwidth allocated to said data traffic and said voice traffic depending upon the class of service of said traffic.

2) A system for interconnecting telephones and computers, said system including a pool of trunk interconnection resources that can be used for either computer data traffic or telephone traffic, said interconnection devices providing a first amount of bandwidth, data traffic generating devices, said data traffic requiring a second amount of bandwidth and having specified classes of service, voice traffic generating devices, said voice traffic requiring a third amount of bandwidth and having specified classes of service, means for allocating multiple qualities of service for multiple streams of data traffic and for multiple streams of voice traffic drawing from said pool of truck interconnection resources.

3) A modular system for interconnecting telephones and computers, said system having a plurality of modules which are interconneded by an Inter Chassis Bus (ICB), said modules including,

a port for connection to said ICB,

station input ports for local loops,

trunk input ports for connection to a central telephone switch,

Ethernet input ports for connection to a LAN network,

an Integrated Data Services Network (ISDN) port for connection to an ISDN line,

a first DSP for handling calls on said station input ports,

a second DSP for handling calls on said truck input ports,

a RISC processor for managing the entire system and for allocating resources to specific calls, said RISC processor including a filtering program and a bandwidth adjustment program .

whereby the resources of said system can be efficiently allocated to individual telephony calls or data flows.

4) The system recited in claim 3 including a software architecture which allows for multiple service types to combine their resources into a larger, shared resource pool.

5) The system recited in claim 3 including means for partially normalizes the class of service characteristics of voice and data traffic, such that the requests for resources for each service are easier to schedule from a single pool.

6) The system recited in claim 3 including means to maintain multiple qualities of service for services drawing from a single resource pool.

7) The system recited in claim 3 including means to provide the multiple qualities of service on integrated voice and data platforms.

8) The system recited in claim 3 including means to improve shared resources multiplexing on integrated voice and data platforms

9) A switching system for efficiently transmitting calls from DS0 channels on a first unit to DS0 channels on a second unit through the public telephone system,

each of said systems including

a flow classification program which classifies data packets into flows and which assigns a bandwidth to each flow.

a filtering program which filters each data flow to account for any mismatch between the bandwidth between which packets in said flow are offered to said system and the bandwidth which is available for said flow whereby some portion of some data traffic is dropped in accordance with a specified priority.

10) A telephone and data switching system that includes a "plurality of resources" that are pooled so as to achieve maximum capacity for the overall system.

11) A modular telephone and data switching system that includes a plurality of chassis,

each chassis including,

means for interconnecting said chassis by means of an Inter Chassis Bus (ICB),

a RISC processor in each chassis,

local loop connection means including a first DSP processor for connecting to local loops,

trunk connection means including a second DSP processor for connecting to truck lines,

an Ethernet controller for connecting to computers,

a Random Access Memory (RAM) for holding data and programs

a data bus for connecting for data flow between said units,

a synchronous voice bus for connecting said local loop connection means, said truck connection means and said ICB.